Clean Water Herald
Clallam County
Environmental Health/Natural Resources
P.O. Box 863
Port Angeles, Wash. 98362-0149

To: Watershed Resident

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ECRWSS

CALENDAR OF EVENTS

Septics 101 Clinics

A 2-hour homeowners' overview on the WHAT, WHY, & HOW of septic systems & maintenance, offered across the county for 2002. Brought to you by the Clallam County septic folks: Mel Thom & Janine Reed, and a panel of local design-install-&-pump professionals.

Day & Date	Time	Location
Wednesday January 23, 2002	1:30-3:30 p.m.	Dungeness River Audubon Center Railroad Bridge Park, Sequim
Thursday January 31, 2002	6 -8 p.m.	Clallam County Courthouse, PA 228 East 4th Street
Wednesday February 13, 2002	1:30-3:30 p.m.	Carlsborg P.U.D. Operations Center
Wednesday February 27, 2002	6-8 p.m.	Dungeness River Audubon Center Railroad Bridge Park, Sequim
Wednesday March 20, 2002	1 -3p.m.	Dungeness River Audubon Center RailroadBridgePark,Sequim
Wednesday April 17, 2002	1:30-3:30 p.m.	Carlsborg P.U.D. Operations Center
Wednesday May 1, 2002	6 -8pm	Dungeness River Audubon Center Railroad Bridge Park, Sequim

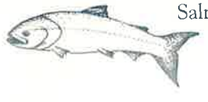
Call Clallam County Environmental Health for information & registration: 417-2258

Natural Landscaping *with Joe Holtrop of the Conservation District*

Day & Date	Time	Location
Saturday April 27, 2002	2-4:30p.m.	Dungeness River Audubon Center Railroad Bridge Park, Sequim
Tuesday April 30,2002	2-4:30	Dungeness River Audubon Center Railroad Bridge Park, Sequim
Saturday May 4, 2002	2-4:30	Dungeness Recreation Area

Space is limited. Call to preregister 452-1912 ext. 5

Look For: *Upcoming Workshops*
Salmon & Wildlife / Flooding / Pony Care



February 2002

The Clallam County

Clean Water Herald

A Newsletter to keep you informed and updated about your Clean Water District

WATER QUALITY STUDY

Completed For Matriotti Creek and Lower Dungeness River

The Department of Ecology with assistance from the Jamestown S'Klallam Tribe and Clallam County completed a water quality monitoring study on the lower Dungeness River and its tributaries. One purpose of the study was to identify sources of fecal coliform bacteria that could be contributing to water quality problems in Dungeness Bay. Forty five sampling sites were established covering the Dungeness River downstream of Ward Rd Bridge, Hurd and Matriotti Creeks, Meadowbrook Creek and Slough, Golden Sands Slough, Cooper Creek and irrigation ditches that empty into Dungeness Bay. Sampling was conducted at least once per month from November 1999 through October 2000. A final report on the water quality study will be available this April, and a water cleanup plan will be prepared in June.

The Water Quality Study Results

(drumroll, please)

In order to identify problem streams and stream reaches many sites were sampled. Upstream and downstream comparisons were made between sites to determine the location of fecal coliform sources. In general the results are concluded below:

On ***Matriotti Creek*** only 4 out of 17 sites met clean water standards for fecal coliform. The highest fecal coliform concentrations and loading were found during the irrigation season.

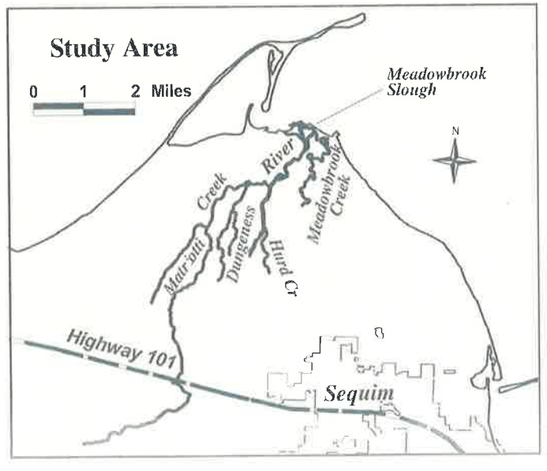
Hurd Creek met clean water standards for fecal coliform bacteria.

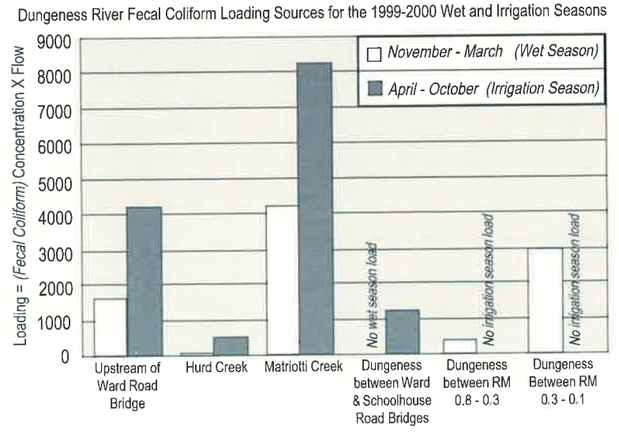
Meadowbrook Creek must meet a more stringent clean water standard than the Dungeness River and its tributaries. None of the Meadowbrook Creek sites met the standards. Generally the coliform sources were highest upstream decreasing downstream. The concentrations were higher during the irrigation season.

Meadowbrook Slough had one site out of four meet clean water standards. The coliform levels increased going downstream and were higher in the irrigation season.

The ***Dungeness River*** sites met current clean water standards. The most upstream site at Ward Rd. was the cleanest and fecal coliform levels increased going downstream. Below the Schoolhouse Bridge the highest fecal coliform levels were during the wet season.

This study will be the basis for a water cleanup plan (also called total maximum daily load plan). It will help identify water cleanup activities and provide recommendations by identifying areas where fecal coliform is highest.





RM indicates river mile. The mouth of the river is RM 0.0, and mileage increases going upstream.

Mushrooms
To The Rescue

Mycoremediation

(When mushrooms are trained to eat the bad stuff)

Battelle Marine Sciences Laboratory has developed a fast, cost effective, and completely natural method to clean up fecal coliform bacteria (as well as toxic and hazardous wastes) using Trained Mushrooms! The result is clean soil or compost. The approach – called mycoremediation – begins with field collection of fungi, followed by scientists conditioning the mushrooms in the laboratory to eat certain things – in this case fecal coliform and other pathogenic bacteria. In the lab the mushrooms have learned to detect, attack, destroy, or inhibit growth of bacteria. The adapted fungal strains (aka the trained mushrooms) can be transported to the site where remediation is necessary. In the field, a pilot scale study of trained mushrooms grown in straw beds through which dairy runoff was diverted reduced the amount of fecal coliform by 50% prior to entering the stream and being transported to commercial shellfish-growing beaches.

Mycoremediation is planned for at least one property in the Dungeness Watershed. Only native mushrooms will be used and treatment is expected within months. Thanks mushrooms!

Farms Targeted in the Dungeness Bay Watershed

The Department of Ecology, Washington State's regulatory agency, conducted a preliminary survey of Dungeness Watershed farms to determine the number and extent of farms contributing to the water quality pollution of Dungeness Bay. The initial survey yielded approximately 40 properties with likely concerns. Since then, Department of Ecology has inspected several Dungeness area farms and referred potential water quality violators to Clallam Conservation District for help. The Conservation District works with landowners on a voluntary basis to help them develop farm plans and implement BMPs (Best Management Practices). The District's cost-sharing programs pay up to 75% of the costs associated with installing needed BMPs.

The landowners and the Conservation District work together to create management plans that meet the landowners' needs and protect water quality and other natural resources. A typical plan includes a system for managing livestock manure, a potential source of fecal coliform in surface water and nutrients in groundwater. Manure is removed from pens and paddocks on a regular basis, and stored in a dry location. Manure or compost application rates based on the nutrient needs of crops and pasture are also provided. Several landowners are currently working with the Conservation District to develop plans and implement BMPs. The Conservation District is currently helping a landowner that has numerous drainage ditches and ponds which cattle and sheep have access to. Plans include fencing the ditches and ponds this summer and installing gutters and downspouts on the barn. BMPs planned on other properties include installing composting bins and livestock crossings over ditches and streams. When streams or ditches are fenced off, alternatives are developed to provide water for livestock.

Pet Waste Can Mess Up More Than Your Shoe

In Kitsap County a portion of Port Gamble Bay was closed to shellfish harvesting due to high fecal coliform counts in 1996. According to a genetic study of the waste in their surface waters, pet waste was confirmed as a source of the pollution. Dog feces contamination was found in the bay and in the upland surface waters.

Dungeness Bay has also been closed to shellfish harvesting due to high fecal coliform levels, and it is possible that our pets are part of the problem. Pet waste left in the open can pollute our surface waters – rain and stormwater carry parts of the poop to our ditches and streams and then out to the Bays and Straits. Because there are so many pets – and some of them are quite big – their waste needs to be disposed of properly.

What to do:

Bagging and Disposing – Bag pet waste and throw it out with your garbage

Bury it in the yard - Bury pet waste in a hole at least one foot in depth that is away from any vegetable garden or surface water. Start a new hole every week or two and cover the old hole well. Avoid burying in the same place again.

Flush to a Sewer – If you are hooked up to a sewer, pet waste may be flushed in your toilet. Septic owners should not flush pet waste!

Following The Bacteria Trail

The Washington State Department of Health measures fecal coliform in shellfish areas to determine if shellfish are safe to eat. As you know, Dungeness Bay has several areas that no longer make the grade. The water has too much fecal coliform bacteria to be considered safe for shellfish harvest. ***Fecal coliform is a name for many different kinds and groups of bacteria that reside in the digestive tracts of mammals and birds.*** Inside our bodies they aid in digestion, but outside they indicate that too much waste is in the water. Fecal coliform, and the company they keep (other pathogenic bacteria and viruses) can make us sick. Fecal coliform from human sources are the most likely to make us sick, because they carry diseases that humans are host to – such as hepatitis.

More than the bearer of bad news, fecal coliform may help find the sources of the waste. Fecal coliform bacteria can be transported via water. Extreme temperatures, sunlight and saltwater will kill fecal coliform. Understanding their reproduction, dieoff and transport within the bay may provide answers as to whether the fecal coliform is coming into the Bay largely from freshwater sources, or from some other source. Tidal influences, circulation patterns, wind and RAIN are some of the challenges the researchers face. An initial study has been completed and a second study will continue to research fecal coliform quantity and transport in Dungeness Bay.

Best Management Practices Help Improve Water Quality

Best Management Practices (BMPs) are ways of managing property that conserve and sustain natural resources.

Examples of BMPs include installing gutters and downspouts on outbuildings to collect roof runoff water, and erecting fences along streams and ditches to exclude livestock. Creating a filter strip along ditches and streams improves water quality by treating contaminated runoff before it enters the water. Gutters and downspouts divert clean water away from areas that are heavily used by livestock, reducing the possibility of contaminated roof runoff water entering a stream. Properly managing manure, including composting is an excellent way to make productive use of what would otherwise be wasted or worse yet, contaminate surface or groundwater.

Clean Water Herald
Published quarterly by Clallam County
P.O. Box 863 Port Angeles, WA 98362

Editor: Hansi Hals
Design & Art by Lisa Shindler © 2002
Art by Lynn Anju © 2001

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(360) 681-4631

Questions? Comments? Confused?
Call shellfish response team leader Val Wilson for the straight scoop and we'll include questions and answers in future updates

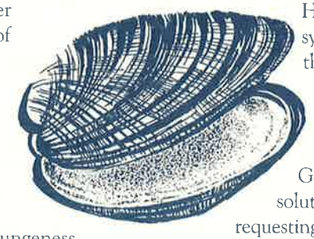
Irrigation Ditch Tailwater Will Be Cleaner

The Conservation District, with technical assistance from the Natural Resources Conservation Service is working to reduce the impacts of irrigation on water quality in Dungeness and Sequim bays. Ditch tailwater (the end of the line – ditch water entering streams or the Bay) has been monitored for two years by volunteer Streamkeepers. Their data revealed the extent and location of water quality problems. The Conservation District has been awarded $550,000 from multiple sources to assist irrigation districts and companies to replace open irrigation ditches with pipelines.

Already completed is about 7,100 feet of pipeline that completely eliminated contaminated tailwater to Mud Creek. Just getting underway is a project involving the piping of about 14,000 feet of ditch that will eliminate contaminated tailwater to Matriotti Creek in the Carlsborg area. Another large piping project scheduled to begin in late winter will prevent contaminated tailwater from entering Matriotti Creek near Atterberry Road. Important partners on these projects are the County Road Department, Jamestown S'Klallam Tribe, Dungeness Irrigation Company, Clallam Ditch Company and Agnew Irrigation District.

Septics Survey Gives Cause For Concern

In an effort to help identify and clean up waste that may be contributing to the Shellfish Closure of Dungeness Bay an office survey chased the paper trail of septic systems near water containing high levels of fecal coliform bacteria. Failing septic systems can pollute our freshwater and are a probable source of the pollution of Dungeness Bay. The office survey tagged systems in the Dungeness watershed that have no permit on file, are more than ten years old, or for some other reason showed they may not be functioning adequately. Covering Matriotti Creek, Mud Creek, Meadowbrook Creek and Golden Sands, a total of 338 parcels were reviewed. Approximately 124 parcels were identified as having a septic of concern in this survey. Now the County Environmental Health Division will work with system owners to ensure that their systems are operating properly and will provide technical assistance if they are not.



Get a jump on being part of the solution. Take the first step by requesting the *Take Care of Your Septic* brochure, a copy of your septic system's as-built (drawing), and by attending one of our free Septics 101 Clinics. Please contact the Clallam County Environmental Health Division at (360)417-2258 for more information.